

Claims

We claim:

- 5 1. A printed circuit board that includes:
a power layer for use in providing electrical power to circuit components;
a ground layer for use in carrying electrical current away from the circuit
components; and
a loss element connected electrically between the power layer and ground layer to
10 suppress electrical noise caused by changes in current flow in the circuit components.
2. The circuit board of claim 1, also including a capacitive element connected in
series with the loss element between the power and ground layers.
- 15 3. The circuit board of claim 2, where the loss element and the capacitive element
reside in two different layers of the circuit board.
4. The circuit board of claim 1, where the loss element resides in an internal layer
of the circuit board.
- 20 5. The circuit board of claim 4, where the loss element resides within an internal
power or ground plane.
6. The circuit board of claim 1, where the loss element includes a resistor.
- 25 7. The circuit board of claim 6, where the resistor has a resistance value on the
order of 1-10 ohms.
8. The circuit board of claim 6, where the resistor is formed from a polymer thick
30 film (PTF) material.

9. A method for use in suppressing electrical noise in a printed circuit board, the method including:

placing a power layer on the circuit board for use in providing electrical power to
5 circuit components;

placing a ground layer on the circuit board for use in carrying electrical current
away from the circuit components; and

electrically connecting a loss element between the power layer and ground layer to
suppress electrical noise caused by changes in current flow in the circuit components.

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10. The method of claim 9, also including a step of connecting a capacitive element
in series with the loss element between the power and ground layers.

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11. The method of claim 10, where the loss element and the capacitive element are
placed on different layers of the circuit board.

12. The method of claim 10, where the loss element is placed in an internal layer of
the circuit board.

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13. The method of claim 12, where the loss element is placed within an internal
power or ground plane.

14. The method of claim 9, where connecting the loss element involves placing a
resistor on the circuit board.

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15. The method of claim 14, where placing the resistor involves placing a device
with a resistance value on the order of 1-10 ohms.

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16. The method of claim 14, where placing the resistor involves placing a polymer
thick film (PTF) material on the board.

17. A printed circuit board that includes:

electronic circuitry;

a power layer for use in providing electric current to the electronic circuitry; and

5 a loss element connected electrically to the power layer to suppress electrical noise
created by sudden changes in current flow in the electronic circuitry.

18. The circuit board of claim 17, where the loss element is formed within the
power layer.

10 19. The circuit board of claim 17, where the loss element includes a polymer thick
film (PTF) resistor.